Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

OCT 0 3 2003

WBN-TS-03-02

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

In the Matter of the) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - TECHNICAL SPECIFICATION (TS) CHANGE 03-02, "REVISION OF BORON REQUIREMENTS FOR COLD LEG ACCUMULATORS AND REFUELING WATER STORAGE TANK (RWST)" - UPDATE OF PROPOSED TS BASES REVISION (TAC N0. 9480)

TVA's letter dated May 30, 2003, contained a proposed revision to the "Applicable Safety Analyses" section of TS Bases 3.5.4, "RWST." The proposed revision indicated that the number of Tritium Producing Burnable Absorber Rods (TPBARs) installed in the core may vary from 0 to a maximum of 2304. Based on an October 3, 2003, discussion with NRC's M. H. Chernoff, the purpose of this letter is to revise the text of TS Bases 3.5.4 to that shown in the enclosed annotated page. The enclosed update to the Bases revises the maximum limit of TPBARs that may be installed to 240.

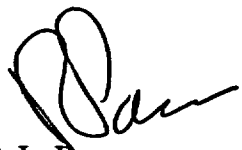
The proposed change does not alter TVA's previous analysis of the proposed boron concentration limits and accordingly does not affect TVA's previous no significant hazards consideration conclusion.

A001

There are no regulatory commitments in this submittal. If you have any questions about this request, please contact me at (423) 365-1824.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on this 3rd day of October, 2003.

Sincerely,



P. L. Pace
Manager, Site Licensing
and Industry Affairs

Enclosure

Technical Specification Bases 3.5.4, "Refueling Water Storage Tank" - Update to Reflect 240 Tritium Producing Burnable Absorber Rods

cc: See page 3

PLP:JLB
Enclosure
cc (Enclosure):

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Enclosure

Technical Specification Bases 3.5.4, "Refueling Water Storage Tank"
Update to Reflect 240 Tritium Producing Burnable Absorber Rods

APPLICABLE SAFETY ANALYSES (continued)

required volume is a small fraction of the available volume. The deliverable volume limit is set by the LOCA and containment analyses. For the RWST, the deliverable volume is different from the total volume contained since, due to the design of the tank, more water can be contained than can be delivered. The minimum boron concentration is an explicit assumption in the main steam line break (MSLB) analysis to ensure the required shutdown capability. The maximum boron concentration is an explicit assumption in the inadvertent ECCS actuation analysis, although it is typically a nonlimiting event and the results are very insensitive to boron concentrations. The maximum temperature ensures that the amount of cooling provided from the RWST during the heatup phase of a feedline break is consistent with safety analysis assumptions; the minimum is an assumption in both the MSLB and inadvertent ECCS actuation analyses, although the inadvertent ECCS actuation event is typically nonlimiting.

The MSLB analysis has considered a delay associated with the interlock between the VCT and RWST isolation valves, and the results show that the departure from nucleate boiling design basis is met. The delay has been established as 27 seconds, with offsite power available, or 37 seconds without offsite power.

Technical Specification Surveillance Requirements 3.5.1.4, "Accumulators," and 3.5.4.3, "RWST," ~~allow a range of~~ ***match*** boron concentrations ~~depending upon~~ ***to*** the number of tritium producing burnable absorbers rods (TPBARs) installed in the reactor core. ***Watts Bar is authorized to place a maximum of 240 TPBARs into the reactor in an operating cycle.*** ~~The number of TPBARs authorized to be loaded may vary from minimum of 0 to a maximum of 2304 TPBARS.~~ Generally, TPBARs act as burnable absorber rods normally found in similar reactor core designs. However, unlike burnable absorber rods which lose their poison effects over the life of the cycle, some residual effect remains in the TPBARs at the end of the cycle. When larger amounts of excess neutron poisons (as in the case with larger loads of TPBARs) are added to a core, there is competition for neutrons from all the poison and the negative worth of each poison (including the reactor coolant system (RCS) boron) decreases. The positive reactivity insertion due to the negative moderator coefficient that occurs during the cooldown from hot full power to cold conditions following a loss of coolant accident (LOCA) must be overcome by RCS boron. Because the RCS boron is worth less, it takes a higher concentration to maintain subcriticality.

For a large break LOCA Analysis, the minimum water volume limit of 370,000 gallons and the minimum boron concentration limit is used to compute the post LOCA sump boron concentration necessary to assure subcriticality. This

(continued)